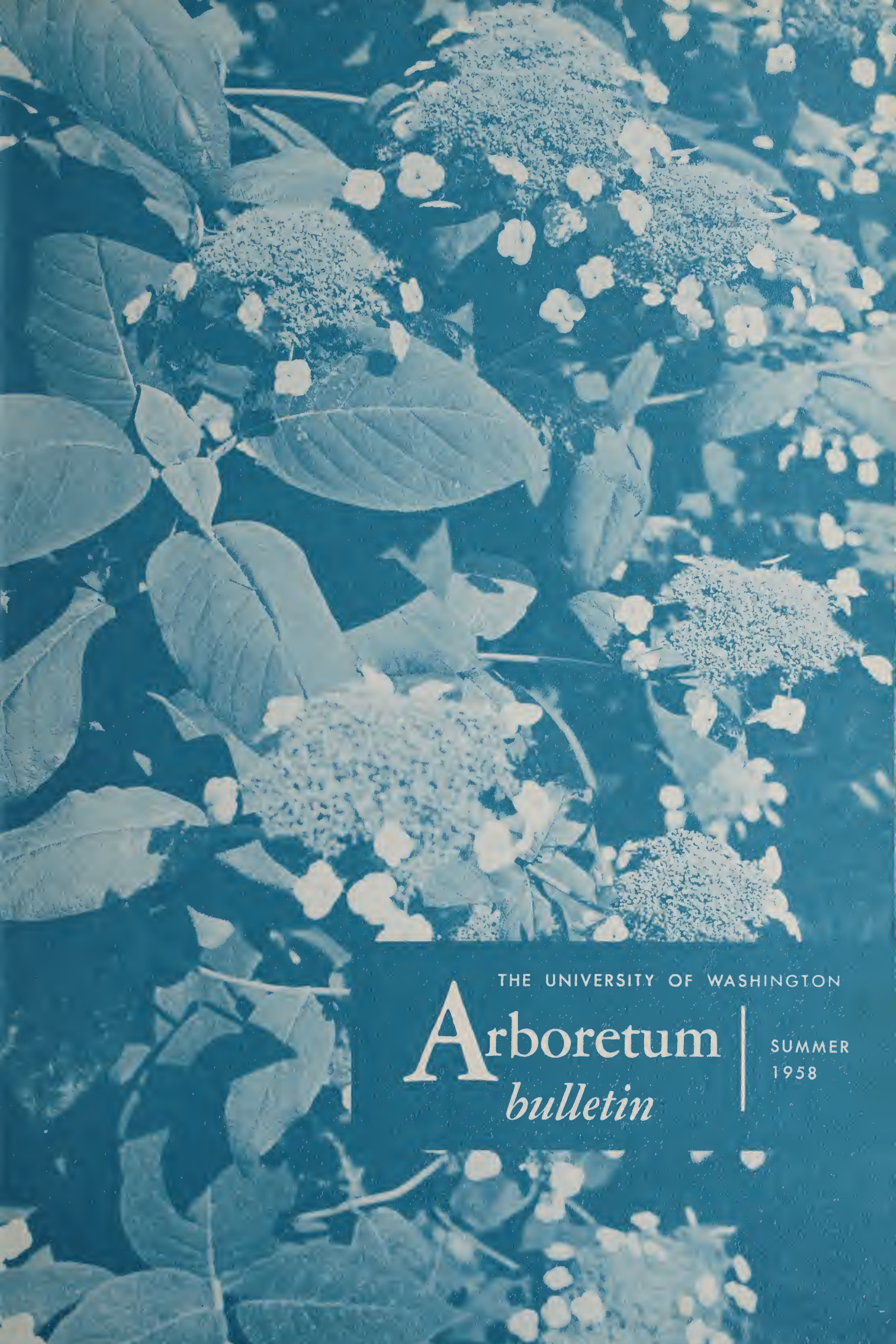


THE UNIVERSITY OF WASHINGTON

Arboretum *bulletin*

SUMMER
1958

Make sure that your property will always be managed efficiently and economically for the benefit of your family. Ask about Seattle-First National's estate planning service . . . available through your branch of our bank.

SEATTLE 1st NATIONAL BANK 1870

SEATTLE-FIRST NATIONAL BANK

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

THE UNIVERSITY OF WASHINGTON

Arboretum bulletin

A JOURNAL OF GENERAL HORTICULTURAL INFORMATION
PUBLISHED QUARTERLY BY THE UNIVERSITY OF WASHINGTON
ARBORETUM FOUNDATION • SEATTLE 5, WASHINGTON

No part of this BULLETIN may be reprinted without the authority of the Arboretum Foundation.

VOLUME XXI, NUMBER 2

Summer, 1958

TABLE OF CONTENTS

Woody Plants That Are Dioecious . . . . . Donald Wyman 42
The Charles Lathrop Pack Demonstration Forest . . . . . Gordon D. Marckworth 44
Golden Chinkapin . . . . . C. Frank Brockman 46
What the Landscape Architect Can Do for You 48
New or Unusual Plants in the Arboretum . . . . . J. A. Witt 50
Colour Magic in the Mexican Wildflowers . . . . . Edith H. Banghart 52
The Changing Scene 56
Planting the New Lot 58
Notes and Comment 60
A Preliminary Experiment on the Rooting of Horizontal Juniper Cuttings . . J. T. Curtis 61
Arboretum Notebook 62
Traffic Analysis for 1958 64
Endre Ostbo 65
Book Reviews 66

COVER: Flowering branches of *Hydrangea aspera* sub-species *strigosa* in early August at the head of Rhododendron Glen

Woody Plants That Are Dioecious

Donald Wyman*

SOME groups of plants bear staminate flowers all on one plant and pistillate or fruiting flowers all on another plant; in other words, they are dioecious. At first glance, this may not appear very important to many a gardener. However, some of these plants make extremely important garden specimens and a knowledge of their flowering and fruiting habits before they are selected for planting would make all the difference between success and failure, if colorful ornamental specimens were wanted.

One time, I visited a very extensive garden in central New York. The owner did much of the work herself and was rather proud of her gardener's "know-how." There was a large, old-fashioned pergola completely covered with a beautiful bittersweet vine *(Celastrus scandens)* and it turned out that the reason I had been invited to visit the place was to determine just why this beautiful vine failed to fruit. It had been growing in this featured spot for fifteen years, tenderly cared for, fertilized with all sorts of mixtures in order to make it "produce," yet in all that time not a single fruit was borne. Of course, it was a male or pollen-producing plant and never would fruit. However, it could have been a pistillate or fruiting plant which was far removed from a pollen source so that the flowers were never fertilized. In either case, it could not live up to the expectations of the owner and provide colorful fall fruit.

There are at least three dozen genera with species that are dioecious. They are as follows:

Acer	Maples; many species
Actinidia	
Ailanthus	Tree of Heaven
Aucuba	
Baccharis	
Celastrus	Bittersweet
Cephalotaxus	Plum-Yew
Chionanthus	Fringe Tree
Comptonia	Sweet Fern
Cotinus	Smoke Tree
Diospyros	Persimmon
Ginkgo	
Helwingia	
Hippophae	Sea Buckthorn
Ilex	Hollies
Juniperus	Juniper
Lindera	Spice Bush
Maclura	Osage Orange
Morus	Mulberry
Myrica	Bog Myrtle
Nemopanthus	Mountain Holly
Orixa	
Phellodendron	Cork Tree
Populus	Poplars
Rhus	Sumac
Ribes	Currants
Ruscus	Butcher's Broom
Salix	Willow
Schisandra	
Securinega	
Shepherdia	Buffalo Berry
Skimmia	
Smilax	Green-Brier
Taxus	Yew
Vitis	Grape
Zanthoxylum	

A cursory examination of these genera shows that some are not valued for their ornamental fruits, so it actually makes little difference whether staminate or pistillate plants are grown. With some of the others it makes a great difference. For instance, the Tree of Heaven *(Ailanthus altissima)* has seeded itself over wide areas of our urban wastelands, and will grow under the most trying conditions where no other tree will do well. When fully open, the staminate flowers

*We are again much indebted to Dr. Wyman, Horticulturist at the Arnold Arboretum, Boston, author of several invaluable books on hedge plants, trees, shrubs, and ground cover plants, for providing an article on this unusual subject.

give off an obnoxious odor—the reason this type should not be grown. The fruits of the pistillate plant, on the other hand, can be very colorful in the fall. The brilliant red fruits of *Aucuba japonica* can only be insured if the staminate and pistillate forms are growing together in the near vicinity.

A few years ago, I was interested in doing some experiments with the *Celastrus* clan in order to learn more about the fruiting habits of the different species. The flower clusters of the pistillate plants were bagged with paper bags while the flowers were still in tight bud. These clusters eventually produced no fruits. Other flower clusters were bagged with very finely woven netting (mesh of 40 openings per inch), fine enough to keep out all pollen-carrying insects, but not fine enough to exclude wind-blown pollen. However, with these net bags the fruits developed normally, proving that wind-carried pollen was effective in fertilizing the pistillate flowers in this experiment. In these cases, pollen had to be carried at least 100 feet, but undoubtedly wind-blown pollen is effective at much greater distances.

In other experiments, pistillate plants of *Celastrus scandens* were planted next to staminate plants of *C. orbiculata,* and in other instances the procedure was reversed. In both cases, normal pollination and fruiting took place, showing that with *Celastrus,* at least, fruiting or pistillate plants can be fertilized with the pollen of other *Celastrus* species.

Bagging experiments were also carried out with other plants. *Chionanthus retusa,* for instance, bore normal fruits inside the paper bags, proving that this particular plant was polygamo-dioecious. *Chionanthus virginica* failed to bear fruit in paper bags, but did bear fruit in net bags. *Morus alba* and *Morus alba tatarica* also responded as did the former, thus proving that the trees used in this experiment had both pistillate and staminate flowers on the same branch.

Most of the hollies are notably dioecious, but *Ilex cornuta* is the rare example of a plant which, in its pistillate form, will produce red fruit without pollinization. Of course, viable seeds are not produced in such instances, but from an ornamental standpoint, pistillate plants are the only ones worthy of growing in the garden. In other experiments we found a plant of the *Ilex laevigata* performing similarly. However, perfect flowers on a plant of *Ilex opaca* are practically unknown, although various individuals have examined thousands of plants and many have investigated countless reports to the contrary.

The pistillate plants of the Ginkgo, also in this dioecious group, bears fruits that have an obnoxious odor, resulting in the pistillate form being on the black list for garden planting. On the other hand, in several genera like *Baccharis, Comptonia, Helwingia, Phellodendron, Populus, Salix, Smilax* and *Zanthoxylum,* it makes little difference as to which sex is used in normal ornamental planting.

Holly, yew, and bayberry are planted primarily for their fruit and usually both sexes must be planted on the same place to insure the fruiting of the pistillate plants. Usually, the staminate plant is placed in the background, or if in a large, massed planting, at the rate of one staminate plant to five or ten pistillate plants. Sometimes it happens that a neighbor may have pollen-bearing plants comparatively nearby that will prove sufficient for fertilizing purposes; then only pistillate plants need be used.

With vines like the bittersweet, a staminate vine could be planted in the same hole with a pistillate or fruiting vine, an effort being made through the years to keep the pollen-bearing plant from growing too vigorously. Bittersweet are easily budded in August, and the active gardener could well afford to try his hand at placing a few buds from a pollen plant on his single fruiting plant. When this has not been done and only a single fruiting plant is grown, I have had excellent success with cutting a handful of flowering branches from the pollen plant and hanging them in a bottle of water in the middle of the fruiting plant, and as the flowers open, insect, wind and gravitation will usually do an excellent job of fertilization.

So, in planning for colorful fruits of these

(Continued on Page 65)

The Charles Lathrop Pack Demonstration Forest

Gordon D. Marckworth*

In 1925 Mr. Charles Lathrop Pack purchased for the College of Forestry of the University of Washington a 160-acre tract of timber located on the Mt. Rainier Highway about 65 miles south of Seattle and 30 miles east of Tacoma. This tract, known as the Charles Lathrop Pack Demonstration Forest, lies just east of the town of La Grande at the beginning of the Nisqually Canyon. Through further grants from the Pack Forestry Trust and from the University, additional acreage was purchased, making the present area approximately 2,300 acres.

The original purpose in setting up the Forest was to establish a forest show window along one of the main traveled highways of the state where it could readily be seen and visited by the public. The tract selected was to show examples of proper forestry practices and, in a log cabin constructed adjacent to the highway, show forestry exhibits of various kinds. When in 1930 the 160 acres was enlarged to 2,000 acres, the purpose of the Forest was also enlarged. At the present time it serves a three-fold purpose: first, it is an educational area where students in the College of Forestry can receive field training in many phases of forestry; second, it serves as a forestry research and experimental center; and third, it is a demonstration area where timber owners, loggers and others in the Douglas fir region can find examples of proper forestry practices.

When the Forest was first developed an arboretum was established adjacent to the main entrance where trees from all parts of the world were planted. The plantings in the arboretum were primarily of individual trees. However, in other parts of the Forest experiments were carried on in the planting of plots to exotic trees of various kinds. Most of these plantings have been killed either by the weather or by competition from Douglas fir. The outstanding exception is a plantation of Port Orford cedar.

In 1928, with the cooperation of the Pacific Northwest Forest & Range Experiment Station of the U. S. Forest Service, a ponderosa pine race study was undertaken. Ponderosa pine seed from various sections of the west were planted at the Wind River Nursery of the U. S. Forest Service and two-year-old seedlings were later planted at Pack Forest and in several other locations in the northwest. The plantations on Pack Forest show the best survival and care. The influence of seed origin is aptly illustrated in these plantations.

One of the beauty spots of the Forest is the old growth stand covering some 65 acres along Newton Creek. This area has been set aside as a natural area and will be left intact with no cultural work of any kind allowed. Excellent specimens of Douglas fir from 350 to 400 years old which range from seven to nine feet in diameter and over 200 feet tall are found on the area. These have long, clear boles and on many of them it is from 60 to 80 feet to the first limb. Some of the western red cedar trees are five to seven feet in diameter and 150 feet tall. Scattered through the area are western hemlock trees which are relatively small in size, rarely getting over three or four feet in diameter and 150 feet in height.

The Forest is made up primarily of Douglas fir stands. About 45 per cent of the area contains Douglas fir less than 30 years old; about 15 per cent contains Douglas fir ranging from 30 to 60 years old, and about 35 per cent is approximately 150 years old. The remaining area is of old growth Douglas fir in mixed stands and in administrative sites.

Through the cooperation of the Civilian Conservation Corps roads, trails and a 72-foot forest fire lookout tower were built. Also through the cooperation of the W.P.A, many buildings were built, including student cabins, a shower house, a mess hall, a classroom, faculty houses, a house for the resident manager,

*Dean, University of Washington College of Forestry and Chairman of the Arboretum Board.

a garage and machine shop, and an office and warehouse building. When the property was bought there was a combination saw and shingle mill on the Forest which cut most of the lumber and shingles used in these buildings. The mill, which was destroyed by fire on May 30, 1946, was replaced by a modern sawmill in 1956. This new mill, cutting timber grown on the Forest, furnishes the University with a large part of its lumber.

In order to have an adequate water supply for fire control and also for irrigation purposes, a dam was built across one of the streams. This dam impounds some 2½ million gallons of water. In addition to the water supply for fire and irrigation purposes, a separate system was constructed to furnish water for the residences, the cook house and the shower house. This water comes from an excellent spring and is pumped into large storage tanks above the camp and piped from there to the various camp buildings.

When the Forest was first set up there were large areas which had been recently burned and in need of planting. In order to secure the necessary seedlings a nursery was established along the Mt. Rainier Highway adjacent to the gatehouse. As all of these areas have been planted, the nursery is no longer necessary and was abandoned several years ago. Such planting stock as is now needed is secured from the Department of Natural Resources nursery near Olympia or from the Industrial Forestry Association Nursery at Nisqually.

All students enrolled in the College of Forestry are required to spend the summer quarter following the freshman year at Pack Forest where they receive field training in silviculture, mensuration and surveying. During the year other classes use the Forest for laboratory exercises in various phases of forest management. Graduate work is conducted on the area throughout the year.

Carrying out the experimental and research work on the Forest we find many different projects by both the faculty and graduate students. There are many examples of research work in silvicultural practices, forest soils, fertilization, forest growth, forest management, the influence of weather on trees and similar projects. Some of the research projects involve cooperation with other agencies such as the entomology and pathology departments of the U. S. Forest Service.

In carrying out the demonstration purpose of the forest many groups and individuals visit it each year. Each year a Junior Logging Congress is held on the Forest where junior and senior high school students from various sections of the state spend three days learning about the forestry and the timber industries. Short courses for the benefit of foresters in both government and industry have been held in the Forest from time to time. Not only do foresters and timber owners visit the forest to learn and see what is going on, but Boy Scouts, Girl Scouts, school teachers and other groups also visit the area.

The Forest, just as the University of Washington Arboretum, is an important department of the College of Forestry and fulfills the three-fold purposes for which it was planned: education, research and demonstration.

The Finnerud Forest

A New Arboretum Responsibility

The University of Wisconsin regents at their February 1, 1958, meeting accepted a conveyance of interest in the Finnerud property in Oneida County, near Minocqua, and adopted the following recommendation concerning this 300-acre forest: "That the administrative responsibility for the operation and management of the Finnerud property in Oneida County, Wisconsin, in which the University has an interest, be assigned to the Arboretum Committee of the University, and that this area, which is to be maintained in its natural state as a part of the Arboretum property of the University for experimental purposes in a way calculated to reasonably preserve native fauna, flora and other forms of life, be designated as "The Finnerud Forest of the University of Wisconsin." This area, which includes considerable lakeshore frontage, will be a highly valuable outdoor laboratory, offering conditions very different

(Continued on Page 69)

Golden Chinkapin

Castanopsis chrysophylla (Hook.) DC.

C. Frank Brockman*

THIS native Washington tree is generally unfamiliar to residents of our state, since it is rarely used here as an ornamental and, in the Puget Sound Region, is only occasionally noted in the Hood Canal area, usually on poor dry soils. Nevertheless it is a handsome tree. Its attractive, evergreen foliage and interesting flowers and fruit make it worthy of more than a casual glance, as well as greater consideration as an ornamental.

The golden chinkapin belongs to the same family of trees as do the oaks, beech, chestnut and tanoak. It generally occurs on poor dry soils of the Transition and Canadian zones on the west side of the Cascades and Sierra Nevadas from the Hood Canal region on the north to southern California.

In Washington the golden chinkapin is never large; often it is little more than a tall shrub. One must journey south to the Siskiyou Mountains of southern Oregon and northern California to see it to the best advantage. There it occasionally attains a height of 80 to 100 feet and a diameter of 3 to 4 feet. Larger specimens are sometimes found. A small specimen is found in the drug garden adjacent to the rear of Bagley Hall on the campus of the University of Washington (fig. 4).

The foliage of this tree is evergreen. Individual leaves are somewhat thick and leathery in texture, and lanceolate to oblong-ovate in outline (2½ to 3½ inches long and ½ to 1½ inches wide); they have smooth margins and are joined to the twig by a short stem or petiole. The dark glossy green of the upper surface of the leaves contrasts with the under surface which is covered with golden yellow scales. The leaves remain on the tree for about three years. The creamy-white staminate flowers, most conspicuous in late spring or early summer, are arranged in distinctive elongated, upright catkins near the ends of the branches; pistillate flowers, from which the fruit will develop, are less numerous and are found at the base of the staminate catkins. The edible fruit is a small triangular nut enclosed in a burr which is covered with stiff, branched spines. It resembles the fruit of the common chestnut except for size and for the fact that two seasons are required for maturity.

In areas where the golden chinkapin attains its best development the trunk is not uncommonly straight and free of branches for a considerable distance. The wood, although somewhat brittle, is fine grained and a pale reddish-brown in color. Where it is found in sufficient quantity it is sometimes harvested, contributing to the limited supplies of hardwood timber in this region which is chiefly noted as a source of softwood, coniferous timber.

Castanopsis chrysophylla **tree, University of Washington Campus, 15 feet tall.**

(Fig. 4) Photo by Whitie Marten

"This handsome tree I saw at the foot of the hill, but very low, not more than four feet high, and being imperfect, from the leaves which are lanceolate, deep glossy-green above and ferruginous underneath, I took it to be a species of *Shepherdia,* but was agreeably disappointed to find my little shrub of the valley change on the mountains to a tree 60 to 100 feet high, 3 to 5 feet in diameter *(Castanea chrysophylla).* Its rich varied foliage, quivering in the wind, clothed to the very roots with wide-spreading branches, and standing alone on the dry knolls or on the crevices of rocks, gives a tint to the general appearance of American vegetation of more than ordinary beauty. As I never saw the American *Castanea,* and having no book, I cannot say whether it is new or not, but am inclined to think it rare; at least I had a

(Continued on Page 70)

*This is the seventeenth in our series of articles on Native Northwest Trees—sixteen for which we are gratefully indebted to Prof. Brockman.

What the Landscape Architect Can Do for You

A condensation of a panel discussion arranged by the Arboretum Foundation and held February 18, 1958, at the University of Washington. Panel members: J. David Jensen, Linley Janzen, Raymond A. Brauner, Charles de Turk, Noble Hoggson.

Moderator: Edward B. Thomas, Educational Director, Seattle Art Museum.

Q. *What is landscape architecture?*

A. Landscape architecture is an ancient profession for the designing of land for the use of man with an effort towards beauty, which, together with architecture and engineering, has helped create most of the great palaces, homes, housing developments, industrial sites and parks of the past and present. Several universities, both here and abroad, have recognized courses in landscape architecture. The landscape architect who practices this profession differs from the architect (although their training is parallel) in dealing primarily with grounds and their treatment rather than structures. He differs from the landscape contractor and the landscape gardener in that he designs and supervises only, whereas the contractor, as his name implies, contracts the actual work and the gardener furnishes the plants and labor.

Q. *What is the scope of a landscape architect?*

A. A trained landscape architect has studied both architecture and engineering as well as landscape history and design, horticulture, soils, irrigation and other details of his profession. He is more than the popular conception of a designer of foundation plantings and flower gardens. He often specializes in certain branches of his profession such as parks, industrial sites, large scale housing projects, public buildings or private homes. Because of his comprehensive training he is capable of success in any of these branches even though his personal preference has kept him in one particular field.

Q. *What is the value of this profession to you?*

A. Some nurseries and contractors offer "free plans" if one deals exclusively with them. This is tempting until one realizes that nothing is really "free," and that the plans are paid for by the profit from selling the plants or doing the work. Also no one nursery carries *all* the most desirable plants, nor have they the experience or training in design to tell you properly how to use the plants they sell. The landscape architect does not profit on the plant or other materials used and is free to order the best plants for the job from many nurseries if necessary. He is the client's agent, paid only by the client—for his advice so that the landscape development best fits the client's needs and pocketbook and then that the job is completed exactly as planned. He is primarily interested in guiding the client's wishes and in completing a job satisfactory in all respects. His only advertising is the satisfied client so it is to his interest that the finished job suits the client, appears well and is economical to maintain.

Q. *What does it cost to employ a landscape architect?*

A. That somewhat depends on whether the job is designing San Simeon for the late Mr. Hearst or sketching a small city lot for Mrs. Newlywed. It depends entirely on the problems encountered, the thought and time required to solve them and the time to record the solution on paper. As to the landscape architect's charges, the bigger contracted job is usually based on a percentage of cost. On lesser jobs a fixed fee or an hourly rate is charged for time spent on consultations, plans, supervision, etc. Methods of charging can depend on the wishes of the client and is based in any event on the time spent on the job. As anyone who has attempted unfamiliar work knows, experienced advice can save money and is definitely worth the price.

Q. *What is involved in planning a new lot?*

A. If a lot has not yet been selected, a landscape architect can evaluate the costs of de-

veloping one lot (hillside requiring retaining walls, but having a good view) as against another (bottom land requiring drainage but having a delightful little brook). If the lot is already acquired, the architect and landscape architect should work as a team from the start. It will be found far cheaper to lower a grade with an eraser on the plan than with a bulldozer after the house is built. Topsoil is expensive, especially when buried under foundations and replacement has to be bought by the truckload. Should the owner have purchased a ready built home, the landscape architect can organize the completion of lawns, planting, walks, etc., before occupancy, so as to avoid those first messy weeks. On a large place being fully landscaped a topography, showing features such as grades, existing trees, house, etc., to scale, is the basis for the sketch plan which indicates what the landscape architect would like to see done and which in turn is the basis for discussion between him and the client. After changes have been agreed upon, a landscape plan is drawn which is the final record of the proposed finished landscape, with all features drawn to scale. Then follows the grading plan, if necessary, the planting plan showing exact location and names of all plants to be used, the sprinkler plan if needed and any necessary detail plans showing walls, steps, pool, terrace, etc. These plans are required for intelligent and comparative bidding by contractors. For the smaller property, perhaps just the sketch plan, supplemented by occasional consultations or supervision, will be sufficient, or, in the case of an intelligent owner doing his own work, consultation alone will achieve satisfactory results at the minimum cost. The things to be considered in landscaping, whether on plans or in the head, are the lot, its exposure, slope, view, existing trees, soil, etc.; the house, its size, architecture, orientation, etc.; the client, his desires, interests, hobbies, etc.; and, last but not least, the money available. This last is very important as complete confidence between landscape architect and client result in pleasant relations and a good job. False pride about financial matters has no place here and can cause unpleasant misunderstandings. So you take the above ingredients of lot, house, owner and purse, mix intelligently, and you are bound to evolve a charming home, enjoyable and easy to maintain which will work for you rather than your slaving for it.

Q. ***What can a landscape architect do for an old place?***

A. In many cases the older property has never been professionally designed—just planted at the whims of perhaps several former owners. The various areas need professional coordinating and certainly simplifying, as they were probably "laid out" and planted in the days of adequate gardening help. Flower beds in lawns, crooked shrub borders, useless pools and overgrown rockeries may be simplified or removed entirely for ease of maintenance. The less desirable overgrown trees and shrubs should be moved or cut down to benefit the others. But principally the design needs changing to suit today's living, lack of gardeners and the different uses and interests of a new owner. Even the originally professionally landscaped older place could well be rejuvenated by a trained landscape architect who is able to evaluate the original design, take advantage of existing conditions and yet make a more usable property. Perhaps the shrubs have overgrown their original part in the design, or frost or disease has left unsightly gaps in the planting and they could benefit by a complete rearrangement. Possibly a favorite tree is now obscuring a window and should be moved to a more desirable location. A former garden or perennial border close to the house and requiring much work could be converted to a labor-free terrace or patio, to better fit our present outdoor living and still maintain the old charm. A new automatic sprinkler system can eliminate unsightly faucets in the lawn and the onerous chore of dragging hoses. With plastic pipe or copper tubing it could be readily installed without disturbing the existing planting to give more efficient watering with less water. Whether it is the complete remodeling of a big property or the simple relocation of a few plants, the landscape architect can help the owner modernize his property in good taste at reasonable cost.

(Continued on Page 68)

New or Unusual Plants in the Arboretum

5. Rehderodendron macrocarpum

J. A. Witt*

ALFRED REHDER certainly stood pre-eminent among botanists who specialized in woody plants, and it is only fitting that a genus of very promising new and ornamental trees should commemorate his name.

The subject of these notes was first discovered in 1931, growing near a roadside shrine on Mt. Omei in western Szechuan province, China. Since that time seven other species of this genus have been discovered and named, all from China.

Rehderodendron macrocarpum is a member of the *Styracaceae,* the styrax family, one which offers the gardener some of the very best of ornamental trees and shrubs, and this tree is no exception.

In its native home it is reported as a small tree of thirty to thirty-five feet, but the Arboretum's single specimen, perhaps now twenty years old, is hardly more than fifteen feet tall. It has a graceful habit, erect, with somewhat lax branches set at right angles to the several mainstems. The leaves, which are not thickly set on the branches, are two to three inches long, elliptic in shape, dark green with reddish midrib, veins and margins. This leaf coloring makes the tree very distinctive, even when not in flower. It is the flowers, though, that make *Rehderodendron macrocarpum* such an elegant tree. In May they appear in short pendent racemes of four to six, each a wide-spreading white bell about an inch wide with a yellow "clapper" of exserted stamens. The flowers appear before the foliage is completely expanded, hence are not hidden among the leaves, and even if they were not showy, their fragrance would soon call attention to their presence. This odor is strong; some compare it to the evergreen magnolia, others to that of certain Philadelphus species, but it is not overpowering even in a closed room. In some ways this is the most pleasing character of a pleasing plant (fig. 5).

*Mr. Witt is assistant director at the Arboretum.

In September the ripening fruit is of considerable interest. The tree is well named *macrocarpum,* large fruit, for it resembles nothing so much as a short red banana hanging down from the branches. It is about four inches long and an inch thick, dull red in color, ridged, and tapered at both ends as is the banana. Here the similarity ends, for this fruit is composed of a spongy, dry endocarp which encloses one or two seeds and there is nothing fleshy about it.

Rehderodendron macrocarpum is found growing at an elevation of from 7,000 to 10,000 feet in western China, which doubtlessly gives it the stamina to stand our more rigorous winters. Our tree was only mildly distressed by the cold of November 1955, although it has been reported too tender to survive at the Arnold Arboretum near Boston. It is probable that this is the only species of the eight in the genus that we will be able to grow, since the others all come from more tropical areas in China, and are quite likely to be much less hardy.

The history of the Arboretum's specimen is interesting. We planted an unknown small tree that had long ago lost its label in the area west of the Winter Garden in October 1949. In the spring of 1954 this plant flowered, and was identified as *Rehderodendron,* probably *R. macrocarpum.* A search through the acquisition books showed that we had received a small plant of this species in 1938 from the Arnold Arboretum, so we assumed that it was the same. The tree flowered again in 1955 and set a small crop of fruit which we harvested and planted. These duly germinated and there are now a few small seedlings from our tree. The fruit, incidentally, con-

(Continued on Page 65)

Rehderodendron macrocarpum
Fruit of Rehderodendron *(Insert)*

(Fig. 5) Photos by Whitie Marten

Colour Magic in the Mexican Wildflowers

EDITH H. BANGHART*

THIS outline relative to my recent trip to Mexico is only a short summary of the wildflowers encountered.

It covers the months of October, November, December, January and February, after the cessation of the rainy season, and takes in, sparsely, the States of Sonora (which borders on the United States), then south through the westerly states of Sinaloa, Nayarit, Jalisco, and bordering on the State of Colima.

While I went down primarily to take colored pictures of the wildflowers in bloom, anyone who is plant conscious in the smallest sense of the word, could not help be greatly impressed by the number of types and species to be recognized, for all Mexico is a botanist's mecca, and surely, too, an artist's resplendent paradise.

In presenting a picture of the various regional segregations, it is necessary to understand something of the contours of the western portion of Mexico, for in these five states there are marked differences in the types of flora, and in order to study plants in their natural habitats (especially in relation to the specific Mexican territories), there are certain fundamental principles upon which the indigenous vegetation is established.

For instance, in the contours of the topography from the desert stretches of the western part of the State of Sonora, there is a gradual rising in elevation through the states of Sinaloa and Nayarit, until, by the time you reach Tepic, in Nayarit, the elevation has reached more than four thousand feet.

Transition in the types of flora, therefore, is very marked, and changes momentarily. Locations vary from desert to hillside and thence to mountains alternately, for what was desert a few short hours before has rapidly transposed itself into verdure-covered hillsides with trees and shrubs and pines, which stretch their colorful gray-green branches horizontally in widespread, drooping tiers.

There are rocky slopes, barrancas, and other ferny ravines. One passes through shady, woodsy areas, and again there are sunny meadows and copses. Ponds are left by the season's heavy rainfall, and there are beautiful waterfalls, stream-sides, and often boggy areas; all these things give the countryside interest and characteristic appeal, and contribute to a keen appreciation of the picture visioned in the mind's eye.

In the desert area, after the rains, it's like stepping on a magic carpet and suddenly finding oneself transported to a veritable fairyland.

Even the sands, hot, drab, and dour looking before, have become iridescently dazzling, completely transposed by the recent rains and the friendly warmth of the sunshine. One could be standing in the heart of a kaleidoscopic mirage, trying to realize one is still on "terra firma," for certainly there are all the prismatic colours of a lustrous rainbow.

Intense and riotous reds, purples, oranges, deep blues, and yellows parade before one's view. It's easy to determine why the Mexican people love their vivid colors, for they see them displayed on all sides of them, and even their sunny dispositions reflect their lavish environment.

It is difficult to decide accurately, sometimes, just what constitutes true color. There is no doubt that heat and vivid sunlight are significant in playing an important part in nature's development, for everywhere in Mexico, and other tropical regions, one sees so much more volume of pigment displayed—the blooming flora is ever more vibrant, intense and elaborate.

When passing through the desert, it is difficult to some to comprehend the distinctive beauty and mystery that are its background. It is strange, awesome and mysterious, almost terrible in its loneliness at times, and yet there is something completely intriguing in

*Mrs. Banghart, who has graciously provided many past articles (the last in the Fall of 1957), was honored by one of our new Arboretum Units in the choice of a name, "The Edith Banghart Unit."

its appeal, for it claims one's interest immediately.

Possibly atmospheric conditions play a big factor, for various pictures present themselves at different times of the day and evening.

Ghostly and grotesque shadows appear at sun-down, produced by the straggly spheres of the Ocotillo *(Fouquieria splendens),* while mammoth Pipe Organ Cactus *(Lemaireocereus Thurberi)* stand like sentinels and rear their strong and majestic pillars, and there are waves of blues, grays, and greens of other unusual and shapely cactaceae.

One gazes far off to the horizon and pictures a hazy lake, only to find upon reaching the area, a veritable sea of the delicate and fragile blue *Nemophila insignis* (baby blue eyes), and here too are countless other diminutive and gleaming flower-heads nodding above the ground.

Abronias, achilleas, and tiny asters are there. There, too, are anagallis in several colors, gilias, and anthemis. Eschscholzias and silenes, tagetes, and portulacas vie with each other for a place in the sun, and ipomaea, convolvulus, and other creeping types are prevalent.

As we journey to higher and more lush regions we find harbingers of the new area and remnants of the older or desert types interchange, and many of the dainty pygmies of the desert have gradually grown into veritable giants in their almost animal-like strength to live, spread, bloom and cover the countryside with decorative and radiant color.

Significant it is to note, that many of these tiny creeping plants of the ipomaea and convolvulus types, and other species of the *Dioscoreaceae, Ranunculaceae,* and *Sapindaceae* families (called "Plantas Trepadores," or "travelling plants," in Mexico), have suddenly become lush and leafy and developed spiral tentacles, spurs and other horny growths to help them climb the thorny leguminous bushes, ceiba trees, telephone poles, and other "props"; one even sees them swinging from tree to tree like highly ornate festoons in some gay fiesta time.

While many of the types I enumerate can be seen along the main highway, it would be difficult to depict accurately their classification driving along at breakneck speed as so many of the visitors to Mexico do. Taking one's time, sauntering along, making use of 'burro" trails and other bypaths, is much more profitable and gratifying to the eager and interested flower lover.

Ordinarily, first class buses are an excellent mode of transportation, but if one wishes to see the countryside in its distinctive and natural beauty, one should make use of the second class bus, which usually traverses the sections east and west of the main highway, and thus delivers you out to the tiny pueblos and villas in the outlying hills.

It is singularly impressive that many of our popular flower favorites, such as ageratums, cosmos, coreopsis, dahlias, zinnias and many others we enjoy growing in our northern and southern gardens, originally came from Mexico; thus it is a thrilling experience to come in contact with them again spreading in wild abandon in their original and native habitat.

One of the most colorful of the Mexican wildflowers is Ageratum *(A. Houstonianum).* One is ever conscious of its graceful deep purple and lavender fluffy flower heads, which cover the hillside and form a glowing contrast to the vivid red earth.

I saw specimens of Abelia *(A. floribunda)* which made attractive shrubs with deep reddish-purple blossoms; these were scattered, but the flowers were much more highly colored than the types we find in cultivation.

Several types of Acacia were encountered; one which I took to be *A. Farnesiana* in Sinaloa, and another attractive Mimosa *(M. distachya)* were just coming into bloom.

I was greatly thrilled to see a beautiful Achimenes with exquisite purple and lavender trumpets growing in a moist, ferny location, and in the same spot several long-spurred Aquilegias of the *A. longissima* type.

Unusually picturesque were the lovely Antigonon *(A. leptopus)* or "Rosa de Monte" as it is called in Mexico. These were blooming everywhere along the main highway, draping themselves from tree to tree and com-

bining their beautiful rose racemes with other highly colored vines.

African marigolds *(Tagetes erecta)* were growing in characteristic profusion along the roadsides and in the fields. Great stretches of the yellow and orange coreopsis spread sheets of color for miles, and pink and purple cosmos framed this wondrous sight.

Many were the specimens of Mariposa lilies *(Calochortus)* hugging the sandy hillsides, and the beautiful *Commelina coelestis* with its lovely blue flowers climbed happily over cactus and other bushes.

Ceanothus *(C. azureus),* from which many of our own beautiful hybrids, such as "Gloire de Versailles" which thrives in the Arboretum, have been developed, spread drifts of azure-blue daintiness along the hillsides in Sinaloa and Nayarit, and there were shrubs of *Caesalpinia mexicana* and Cassia *(C. tomentosa)* with their ornate red and yellow blossoms sparkling in the sunlight.

Cupheas, both red and white, were growing along the highway and in the ditches, and around Lake Chapala in the State of Jalisco, hundreds of the lovely evergreen Choisya shrub *(C. ternata)* were coming into bloom, perfuming the whole countryside with its fragrance.

Popular among the flowers we grow in our gardens is the dahlia. We see this growing wild in Mexico in several states in great abandon. *D. coccinea* in its red and piercing orange shades, and the cactus-like form which I took to be *D. Juarezii* were abundant.

The smoke tree, *Dalea spinosa,* not the European smoke tree we know as *Cotinus coggygria,* but a white-barked bluish flowering shrublet covered the hillsides near the desert areas, and growing in with them hundreds of bushes of Palo Verde *(Cercidium Torreyanum).*

Surpassingly handsome were specimens of Datura *(D. suaveolens),* with sweet-scented purple blossoms lined with white. I saw healthy plants of these growing over an Indian woman's adobe; with it was a beautiful pure white dahlia, which she said she brought in from the woods. I noted many dahlias were growing in deep shade down there.

Particularly thrilling was it to see hundreds of the rich and highly colored vivid red *Euphorbia pulcherrima.* This we recognized at once as our radiant Christmas Poinsettia. It was most picturesque growing up high bluffs near Tepic, in the State of Nayarit, and in the canyons nearby were fine bushes of the creamy white flowered Matilija poppy *(Romneya Coulteri).*

Luxuriant drifts of *Fremontia mexicana,* which I took at first to be a potentilla, they looked so familiar, had attractive gray-green foliage and were covered with brilliant orange and yellow blossoms.

The mountain laurel or Frijolillo (Mescal Bean) covered the hillsides everywhere, while along the highway and up rocky slopes towards Guadalajara in the State of Jalisco, were many gleaming orange flowered specimens of a tall growing shrub of the Helianthus family.

In this same area my interest was greatly enhanced to come upon a lovely vivid deep blue gentian, growing at about 3,000 feet in a dampish location. This gentian was much fringed, similar to our own *G. crinita,* but the foliage was completely linear and dainty. I discovered that this was *Exacum affine.*

There were pastoral fields of luxuriant masses of illuminating blue lupins, many blue-flowered linums, and thousands of Lopezia *(L. albiflora)* with white and pink flowers; here, too, were several specimens of a Lithospermum, *L. angustifolium* I believe. They grew about two or more feet high, the stems and foliage quite hairy and the flowers a vivid yellow.

Glowing were the lovely red and yellow Lantanas *(L. camara)* and a dwarfer type with lavender flowers was also prevalent; on the beaches near San Blas countless specimens of a striking large-flowered lavatera were growing. The rosy Malvastrum *(M. fasciculatum)* was in this region, and there were many purplish flowered Linanthus *(L. dianthiflorus)* covering the sands.

It was interesting to see gorgeous specimens of Monarda, similar to *M. fistulosa*

rubra. These grew in ditches and lowly places and were three and four feet high with very lovely large crimson flowers. Literally thousands of a fragile white-flowered sedum covered the ground for miles, and in sandy places a highly colored rose sabbatia grew in great masses. Blue *Salvia mexicana* flourished in many sections, and I encountered types similar to the red Cardinal Sage *(S. fulgens)*.

In the tropical waters at Tovara, near San Blas, in the State of Nayarit, one came upon exotic and striking specimens of a glistening scarlet orchid of the epidendrum type. These were unusually compelling and picturesque among the tall tree ferns and other slender spires of the jungle masses.

Also in this area one encountered countless numbers of an orchid-like flower with vivid orange-red blossoms, completely covering large trees. Upon closer examination they were found to be a kind of air-plant or epiphyte, similar to a parasite, but not, however, obtaining sustenance from the tree branches, but merely perching on them and living on air and sunshine.

Near here were beautiful tradescantias, which I took to be *T. bracteata*. These have very large deep blue flowers more than an inch and a half across; the coloring was unusually effective and surpassingly lovely.

In Santiago County we journeyed across a large lagoon in Indian dug-outs, to the historic and ancient Isla de Mexcoltitan. Here in these jungle waters one was surrounded by luxuriant masses of wondrously colored nymphaeas. Unusually distinctive was a lustrous and ethereal blue water hyacinth *(Eichornia crassipes)* and everywhere were alluring waterlilies whose glistening reflections cast colors of pink, yellow and white. On all sides were myriads of gaily-plumaged water birds that rose lazily in flight as our canoe was punted along amongst them.

Mexican trees, like the *Cactaceae,* are a highly concentrated group in themselves. I would like to name a few, however, in this limited space, that I greatly admired during the period of my sojourn.

Prevalent in some sections was the well-known Arctostaphylos *(A. polifolia),* 'madrono.' The leaves were exceptionally green and handsome, the blossoms glistening white and fragrant, and the bark an intense and vivid brick red. Also there were many 'Amapa' trees; these, too, were covered with velvety white flowers.

I noted two varieties of Crataegus, 'tejocote' as it is called in Mexico; very large shrubs with exceedingly dense spines and foliage.

Several varieties of Cordia, or 'siricote,' with lovely white blossoms were evident, and the imposing and spreading branches of the Ceiba *(C. pentandra)* trees were handsome and commanding; these also had rose-tinted white blossoms.

Many flowering eucalyptus with brilliant red and yellow flowers were outstanding, and ravishing, indeed, were the Jacaranda *(J. acutifolia)* trees with their fern-like foliage and many striking lavender blue flower clusters.

A handsome fig tree, which I believe was *Ficus petiolaris,* was seen in several states. These were tall white-trunked trees with exceptionally lustrous foliage; another white-blossomed tree, full of bloom but completely leafless at that season, was *Ipomoea arborescens*.

The new foliage of the *Mahonia pinnata* was colorful, interspersed as it was with the late winter's bright red leaves, and imposing in the extreme were the beautiful mango trees *(Mangifera indica)* with their large and spreading branches, and white flowers which later develop into edible fruit.

The Annona trees were also interesting, and these, too, produce a luscious fruit much prized in the State of Jalisco.

Everywhere in the southern sections, of course, one sees handsome specimens of the Royal Poinciana tree with its vivid and exotic red flowers. This I learned has had its name changed to *Delonix regia,* but whatever its classification, it surely is a regal and commanding sight to see it in its breath-taking blossoming season.

Beautiful in the extreme is the scenery of Mexico, with its gleaming wild shrubbery bordering the estuaries, the natural beauty of the

(Continued on Page 67)

The Changing Scene

Under this title we propose to publish from time to time comparable photographs of various areas or corners in the Arboretum, taken some years ago and again recently, in order to show the changes and development which have taken place in the intervening period. This will not only form a record of our progress but also perhaps introduce some of our readers to plantings or views they may have not seen.

1. Loderi Valley

Prior to opening it up early in 1949 this valley had been filled by a vigorous growth of alder, willow, vine maple, wild cherry and other native trees, with an undergrowth of several species of *Rubus* (blackberries, thimbleberries and salmonberries), red elderberry, etc. The first photograph, taken March 16, 1949 (fig. 6) shows the area cleared and ready for planting. A week later 38 young rhododendron plants, raised from seeds of *Rhododendron Loderi* given us in November 1940 by Mr. Herbert G. Ihrig, were set out in a bed beside the service road which passes through the Valley to Azalea Way at its lower west end.

The second picture (fig. 7) shows this group nine years later, in full bloom at the end of April 1958, some 10 to 14 days earlier than usual, due to the mild winter and warm early spring weather.

These seedlings have been most successful in this site, being perfectly hardy to at least near zero F., flowering most freely almost annually, the majority highly fragrant, in color varying from pure white through cream to flesh, blush, and occasionally of richer pink hue.

A group of *Rhododendron Loderi* 'King George' beyond them was most prominent and very beautiful until the abnormal early cold weather in November 1955. As a result of this several plants were entirely or partially killed and the planting as a whole was spoiled, although some individuals still remain.

On the opposite higher south bank are specimens of several other forms of *R. Loderi,* including 'Pink Diamond' and 'Sir Joseph Hooker' as well as fine examples of 'Faggetter's Favorite,' 'Pilgrim,' and the hardy and handsome Leonardslee form of the hybrid *R. Luscombei.*

Amongst them, flowering somewhat earlier, are varieties of *Magnolia Soulangiana* ('Alexandrina,' 'Amabilis,' 'Burgundy,' 'San Jose' and others), and for the future enjoyment of our visitors thriving young plants of *M. Dawsoniana, M. Sargentiana* var. *robusta,* and the more tender hybrid between *M. Campbellii* and *M. mollicomata.* This was killed to the ground in November 1955, but is now recovering rapidly, whereas *M. Campbellii* succumbed to the conditions we experienced that week.

At the sunny west end of the Valley a bed of seedling forms of the flame azalea *(Rhodn. calendulaceum)* delight us in late May and early June by their rich apricot, orange and near red flowers; five months later the brilliant scarlet of the three sourwood trees *(Oxydendrum arboreum)* in the same bed is unsurpassed by any other plant in the Arboretum.

In all, we may say, and our visitors can appreciate, that the changes wrought in Loderi Valley have been for the better.

B. O. M.

Upper

Loderi Valley after clearing operations March 16, 1949.

(Fig. 6) Photo by WHITIE MARTEN

Lower

Loderi Valley, April 28, 1958, *Rhodn. Loderi* seedlings in center.

(Fig. 7) Photo by WHITIE MARTEN

Planting the New Lot *

FOUR members of the Washington Nurserymen's Association, from four widely separated points of the Greater Seattle area, discussed various phases of PLANTING THE NEW LOT and answered pertinent questions. This was the second session in Series I of the Arboretum Foundation's 1958 Educational Program. The Foundation president, Edward B. Dunn, served as moderator and panel members were John Strander, Charles Rohn, Harold Hopkins and Bryan Taylor.

John Strander led off with a suggested planting sequence. He stressed the fact that we should never consider any plant at all until the architectural and local traffic problems have been settled. He felt we could almost determine the continuity of planting by the size of the material—starting with trees, then large shrubs, smaller shrubs, dwarf shrubs, and finally, herbaceous perennials. Mr. Strander reminded us that on an average lot almost one-half of the area will be covered by an impervious layer (buildings and driveways) and the remaining area will have to take care of draining the whole.

Mr. Taylor talked about trees — their shapes, forms, and uses. He stressed the importance of scale (the apparent relationship of size) and upheld the owner's right to have a miniature arboretum if he so desires. We should, however, use the plant material according to texture just as we would drifts of one species or variety. Trees are chosen for shade, for screening, to serve as background for garden or house, as a frame for a view, and only incidentally for their color and esthetic value. In using trees in our plantings we must remember that the upright form, like the Amanogawa cherry, will stop the eye, while the horizontal structure of the Mt. Fuji cherry will carry the eye on. He reminded us that we should use textures for emphasis (needle against broadleaf) but that we do not want *all* accents, and to avoid a spotty effect we should grade foliage size gradually and keep them in the same shade of green.

Harold Hopkins called for adaptability on the part of the garden owner. He said that all too often we come into the nursery with an unbending determination that one, and one only, shrub will do for a particular situation, when actually we could substitute Rhododendron 'Cynthia' for 'Betty Wormald' without sacrificing the effect we want. This was just one example of his contention that almost any shrub or tree has a number of alternatives. He advised us to stand inside and look out, and then plant the picture we want to see. Some of the facts a nurseryman needs to know about us and our gardens were stressed. It would be helpful if we would mention the location and exposure of our garden for there is a great variation in temperature in the various areas of the Puget Sound region. He would also like to know what type of soil we have and the ultimate size of tree or shrubs neded in a specified location.

Charles Rohn discussed groundcovers and ways in which they can be used. We use them to "bring the picture down to the grassline." They serve many functions in the garden quite apart from the clothing of the surface; for steep banks and slopes, and for dry, wet, sunny or shady situations. He told us we must give our groundcovers especial care for the first year but after that trial period they should more or less take care of themselves.

Mr. Mulligan, Director of the Arboretum, showed slides of trees and shrubs which might be used for interesting plantings in new or old gardens.

The second half of the evening was given over to a discussion of horticultural practices.

Mr. Rohn's subject was planting and he stressed the importance of knowing our soil. We must know its deficiencies before we can know what plants will grow in it and how to correct its unbalanced content. Evidently these men have seen many of their plants go into heavy clay, for almost everyone of them had

*A report by a member of the Foundation's Education Committee on the meeting held on the University of Washington campus, March 11, 1958.

something to say about correcting a clay condition. There is a great variation in the type of soil required by different plants and it is our responsibility, as gardeners, to add the needed ingredients; manures, compost, sand, humus, loam, or mulch, according to individual requirements. We were reminded that sawdust mulches almost always bring a need for more nitrogen.

Mr. Hopkins warned us, "Do not prune unless you know *why* you are pruning and what result you are trying to achieve." His criterion for choosing the man on the operating end of the pruners was, "If your prospective pruner can name your shrubs then there is a chance he knows how to prune them."

"Remember gardens are for people . . . Prune for the good of the owner as well as the good of the garden."

Shrubs that bloom before the lilacs require gentle pruning *after June*. Shrubs that bloom after June should be pruned in February or March, and rather severely. Prune flowering peach right after it blooms, as a prevention against leaf-curl. Remember that thinning is better than clipping. Take out every third limb on shrubs like blueberries and *Rosa rugosa*.

Mr. Hopkins maintains that every gardener should have one shrub he doesn't like, then in times of frustration he can go out and prune it violently. This is an excellent panacea for nervous tension.

Mr. Taylor's program for fertilizing was, as always, concise and to the point:

End of November — spread wood ash on rose beds, perennials, and lilacs, 1 to 1½ inches deep (do *not* use ashes from compressed sawdust logs)

—2 good handfuls (lady's) of bonemeal for roses, lilacs, and perennials

—1 double handful for each two feet of lilac plant

December—1 good handful of lime, as above

March 1 — 1 to 1½ inches of well-rotted manure, or 1 inch of compost in a *band* around the tree or shrub or ¼ inch dried chicken, sheep, or cow manure

April 1
May 1
July 10

} 1 tablespoon of Alaska fish fertilizer to each 2 feet of height or spread, whichever is the greater. Dilute in water as per directions on bottle.

When using sawdust mulch it should be at least 2 to 2½ inches deep, then use 10 pounds of sulphate of ammonia per 1000 square feet per inch of mulch.

Mr. Strander's subject was Easy Maintenance, with less expense and less labor.

1. The soil should be as rich and good as possible; add peat and fertilizer—do not skimp in the beginning; provide proper drainage.
2. Choose long-lived varieties. The right plant in the right place! Do not try to change the natural character of the plant. Choose hardy and tolerant varieties which will do well in the temperature and soil conditions of your garden. Keep plants healthy by proper pruning and spraying.
3. Avoid clipped hedges; topiary demands constant care.
4. Eliminate beds which need constant changing of material.
5. Use neat, severe, and effective dividers between grass and beds. These mowing edges will be time savers and do away with hand trimming.
6. Lay out the garden, as far as possible, for mechanical maintenance.

So we learned that trees do more for a landscape than any other plant material; that shrubs should be chosen for year-round effects; that we should choose shrubs of adequate size; that we should strive for a sandy, loamy soil with plenty of humus; that the best time for pruning is when the plant will have the longest period of growth in which to form new bloom-buds; that gardens should be planted to meet the needs of those who live with them; and that we are exceedingly fortunate to have such men as these to advise us in our choice of plant material.

And we all went home laden with notes and with good intentions.

The Arboretum Bulletin

VOL. XXI, NO. 2 SEATTLE, WASH. SUMMER, 1958

ARBORETUM FOUNDATION
OFFICE HOURS
9 a. m. to 4:30 p. m.
Monday through Friday
Phone EAst 5-4510

ARBORETUM FOUNDATION OFFICERS

EDWARD B. DUNN, *President*
DR. WALTER A. MOORE, *Vice-President*
PHILIP W. BAILEY, *Vice-President*
MRS. PAGE H. BALLARD, *Vice-President*
ROSCOE DRUMMOND, *Treasurer*
MRS. W. KIRBY HOLMES, *Secretary*
MISS GENE WEBB, *Executive Secretary*

BULLETIN EDITORIAL BOARD
BRIAN O. MULLIGAN, *Editor*

Mrs. Page Ballard
Mrs. James Buzard
Mrs. J. Thos. Dowling
Dr. A. R. Kruckeberg
Mrs. Beth G. Malmo
Mrs. L. N. Roberson
Mrs. O. B. Thorgrimson

Special Notice

To keep memberships in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and THE BULLETIN will be discontinued.

Arboretum Membership Blank

☐ Active	$ 5.00
☐ Contributing	10.00
☐ Supporting	25.00
☐ Sustaining	50.00
☐ Sponsor	100.00
☐ Life	500.00
☐ Endowment	1,000.00
☐ Affiliated Garden Clubs and other organizations	10.00

The Arboretum Foundation,
University of Washington Arboretum
Seattle 5, Washington

I hereby apply for membership in the Arboretum Foundation and remittance for same is enclosed to cover dues for the next succeeding 12 months.

Name .....

Address .....

All memberships are non-assessable.

Notes and Comment

Hats Tipped in Our Direction

Following our publication of the Blooming Calendar (insert in the Spring 1958 issue) and its distribution, including many separate copies of the Calendar to other Arboreta, Botanic Gardens, etc., we are proud to print a few comments . . .

"It is a most interesting and useful compendium."

H. O. Whittemore
Univ. of Michigan, Ann Arbor

"I think it is very well done and most useful. It is something we do not have available to our many visitors though we have thought of getting one out some time. Yours will probably spur us on". . .

C. E. Godshalk
Morton Arboretum
Lisle, Illinois

"It is a handsome and well prepared publication indeed. More power to you. This is the best of its kind I have ever seen."

Lynn M. F. Harriss
Asst. Supt. of Parks
Oakland, California

"We are most interested in your Blooming Calendar and wish something on the same lines could be more widely distributed in this country."

J. A. Dyter
R. C. Notcutt, Ltd.
Woodbridge. Suffolk
England

"How wonderful the Quarterly is. There is so much information in it for the real gardener."

V. N.
Enumclaw Garden Club

We are pleased to welcome the following new members to the Arboretum Foundation, March 1 to June 1, 1958:

Mrs. J. P. Ballantine, Mrs. Wm. Bernfield, Mr. and Mrs. Jackson A. Blacker, E. Brewin, Mrs. L. D. Brill, Mrs. Price Bruner, Mrs. Laurance S. Carlson, Mrs. Frederick Chris-

topher (Winnetka, Illinois), Mrs. Frank Del Giudice, Mrs. H. B. Dye, Mrs. R. L. Dyer, The Edmonds Floretum, Mrs. Henry Elliott, Mrs. Ford Q. Elvidge, Mrs. David M. Evans, Mrs. George Geyer, Mrs. Wm. S. Gilbert, Mrs. Crawford H. Graham, Mrs. B. P. Hemry, Mrs. W. W. Hoagland, Mrs. Robert A. Hobbs, Mrs. Wm. M. Holman, Howard F. Hulet, Miss Amelia Johnson, Mrs. Lawrence S. Karrer, Mrs. H. F. Keeler, Mrs. Jacob Kessler, Mrs. E. K. Knott, Mrs. Donald Lewis, Mrs. Robert McCullough, Mrs. J. A. McKillip, Miss Alma Meade, Mrs. Walter B. Meserole, Mrs. Joseph W. Miller, Mrs. Robert Nuber, Mrs. Russell J. Nyland, Mrs. Del Oxley, Richard W. Painter (Port-

(Continued on Page 70)

VERY IMPORTANT DATES

. . . to mark on your calendar!

AUGUST 3 - 4 (Sunday - Monday) — Town Garden Tour—four gardens, Lake Washington, Harvard North.

AUGUST 14 (Thursday)—Bainbridge Island Garden Tour—four gardens on the island.

AUGUST 17-18 (Sunday-Monday)—Country Garden Tour—four gardens, Bellevue, Medina.

SEPTEMBER 25—"Open House" at the Arboretum.

OCTOBER 9—Plant Sale at the Arboretum. Annual Arboretum Unit sale.

Call the office for further information, EAst 5-4510.

A Preliminary Experiment on the Rooting of Horizontal Juniper Cuttings

J. T. Curtis

THE Horizontal Juniper *(Juniperus horizontalis)* occurs in Wisconsin on the beaches of Lake Michigan and Lake Superior, and also in a very narrow band along the edge of the non-glaciated region in interior counties. In the latter area a number of forms occur which seem to offer great horticultural promise. Previous trials at propagation of these by usual methods had not been very successful. This year a simple new method was used which gave 80 percent success. Terminal branches were removed from the stock plants, their lower leafy side branches were pruned off, and the cleared portions were inserted in open beds of muck soil. The soil was almost pure organic matter, black in color and alkaline in reaction (pH 8); it was formed by the breakdown of sedge peat in the bed of Glacial Lake Wingra. No covering of any kind was used and no artificial watering was employed. Rains were evenly spaced during the summer, so the cuttings were never exposed to severe drought, although they experienced several periods of 7 to 10 days without rain.

The cuttings ranged from 15 to 25 inches in length, with stem diameter of ¼ to ½ inch at the basal end. They were placed in the soil on May 6. By June 15 one-fifth of them had turned brown, but the others showed signs of new top growth. The dead cuttings were all in the smallest group. When the live cuttings were lifted toward the end of August all had an abundant fibrous root system, with roots of up to 12 inches in length. The best and most numerous roots occurred on stems in the ⅜ to ½-inch diameter class. It seems possible that larger cuttings might have performed still better.

With this new method we hope to develop a collection in the Arboretum of all the potentially valuable forms of Horizontal Juniper we can find. The better strains will be further propagated and used in display beds to demonstrate the wide usefulness of this attractive evergreen as a ground cover for dry banks and other exposed places.

———

Reprinted by permission from University of Wisconsin *Arboretum News*, Vol. 6, No. 4, (October, 1957).

ARBORETUM NOTEBOOK

This section is particularly designed for notes, information and queries concerning beautiful or unusual plants from growers of all types or experience. We solicit your remarks and ideas, but space limitations may sometimes restrict us to publishing those of the widest interest.

Garden Hints

JULY

In early July we should watch all garden material for pests and plagues. Our frostless winter has left us a legacy of diseases and pests we may never have seen before. There are sprays for each and every one.

A few hints. When using liquids keep solution well stirred; never apply when soil is dry (water soil two hours before spraying). When using powders moisten soil first and follow directions.

July is the month for successful layerings. Most shrubs, including roses, with carnations and many other plants—hardy and succulent —respond to this manner of increasing your stock. The Arboretum has books describing these methods.

The propagation by cuttings makes July and August one of the most exciting seasons of the year. Most Arboretum Units have practiced this horticultural operation and know its value.

Many biennials and perennials, such as heucheras and pyrethrums, may be divided now. I read some time ago in an English garden magazine, of a hybrid between Heuchera and Tiarella, the Foam flower. It is called Heucherella "Bright Bloom" with fifteen- to eighteen-inch inflorescences blooming all through the summer. It is propagated by division, producing no seeds.

Both kerrias, single and double, brighten a bleak spot with their masses of golden-yellow blooms. They bloom in May and generally need thinning after blooming.

Iris innominata, the little yellow iris from southern Oregon, is easily raised from seed and generally produces blooms of many different colors—orange-yellow, apricot, or lavender. The root-stocks are tender and care must be taken when transplanting an established clump. These make an attractive edging.

The bed of Asiatic or Candelabra primroses in Mrs. John Blackford's garden this year, the last of April and the first of May were, indeed, something to admire. Each bloom was distinctly special. These were second-year blooms raised from seeds gathered from her own primroses. Last year they were quite as beautiful. Next year, in spring, she will separate the plants, each little rosette making another plant. They are growing in a very damp low part of her garden. They generally bloom in June following the show of Polyanthus primroses, but this year, after our warm winter, they started earlier.

In this mid-season—July and August—the shrubby Hypericums figure conspicuously among the low shrubs and at the edgings of the shrub borders. *H. prolificum, H. lobocarpum* and *H. Kalmianum* are native to the United States, round-topped shrubs, three to four feet high, with each twig ending in a cluster of brilliant yellow blooms. There is one from China, *H. patulum* var. *Henryi,* somewhat taller in height and with larger and deeper yellow flowers.

The Buddleias are easy to grow and are very showy in August and September. In a rich loamy soil inflorescences have been measured over thirty inches long. They are native to China.

AUGUST

The new blooming calendar of the plants in the Arboretum is a very valuable folder. When you hear of a bloom new to you, consult your calendar and no doubt you will find the plant or shrub listed.

Primrose seed should be planted as soon as ripe. I have had *P. rosea* germinate in a few days if planted immediately after gathering. If primrose seed is kept until spring to be planted it may wait a year to germinate or it may never germinate. *P. japonica* may wait until the following March. Miss Gertrude Jekyll, an English gardener famous for her

skill growing primroses, always advised placing flats of seeds under hazel bushes. The light protection of fine branches nursed them through.

A mulch now, of peat moss or decomposed leaf mold, is much appreciated by the small trees or shrubs you have recently planted. They should not be fertilized at this time; it might force the new growth which could easily be nipped by frost.

Two outstanding shrubs are at their best in August and often far into September. They are the hybrid *Ceanothus,* "Gloire de Versailles," and the fragrant Spanish Broom, *Spartium junceum*. Both are valuable for cutting and this light pruning is beneficial to the bushes. The pale blue Ceanothus is a perfect companion for the clear yellow blooms of the broom.

August and September are months when cuttings of geraniums may be taken for next year's plants.

One of our most common wild flowers, *Smilacina racemosa* (False Solomon's Seal), I am pleased to report received a First Class Certificate at the Chelsea Flower Show in London, May 1957.

If you raise your own pansy plants, August is a good month to plant the seeds.

The bulbous iris should be planted in August to get well established and they will bloom their first season. *Iris reticulata, Iris histrioides* and *Iris Danfordiae* are three of the best. They need a rather sheltered position and will then continue for many years. Madonna lilies should also be planted in August.

If you have never grown Schizostylis 'Mrs. Hegarty,' don't be satisfied until you get some roots. They are not easy to find, but the fall-blooming, clear pink, orchid-like flower is a joy. It is charming planted with crocus of the same season.

SEPTEMBER

As fall approaches, garden work may not be as fascinating as in the summer. But a ripeness and maturity are evident that gives satisfaction. Staking where necessary and picking off dead flowers are duties that should not be neglected. The autumn garden is delightful, perhaps, because we are more grateful for the few blooms that have persisted.

An accent on leaves is especially noticeable in a late fall garden and we are reminded of Thoreau's very apt remark that "Nature made ferns for pure leaves, to show what she could do in that line." A ground cover of our native polypody *(P. vulgare)* recently seen in a woodland garden, formed a charming mosaic all four seasons. Another fern more delicate in appearance, *Dennstaedtia punctilobula,* the hay-scented fern of the east, is not so fragile as it appears. It will push along an old log and its lacy fronds will often reach far out into a sunny area. Both these ferns should only be used where a woodsy atmosphere is desired because their compact rootstalks will kill growths of more precious plants.

In my own garden I planted *Andromeda polifolia* among the heathers under the high-branched, slender Douglas firs. There were masses of *Arctostaphylos Uva-ursi* along the two paths that led to the high bank above the Sound. This grouping of heathers and Andromeda was somewhat taller than a ground cover and established an interest for the whole year. Some native plants of *Gaultheria Shallon* (Salal) were left to give an occasional accent to the planting.

Fine colors in the phlox garden should be chosen now for division. They will have a start before frost. Most everyone that grows phlox is surprised each year when he finds blooms with colors quite different from those he planted—magenta, dull and uninteresting. These are probably seedlings that came from seeds left to develop on the plants. Cutting the flowers as soon as through blooming and before seed ripens generally obviates this problem.

Most gardeners plant *Daphne Mezereum,* both the purple and white flowered varieties, for their blooms, but the berries, holly-red on the purple form and amber yellow on the white variety, add a distinction to the fall garden. They also produce self-sown seedlings valuable to transplant to other parts of the garden.

So seldom is Sternbergia found in gardens! It is a fall-blooming, yellow, crocus-like bloom that comes from a bulb. *Sternbergia lutea* foliage comes before the blooms, a nice setting for the flowers. It likes well-drained soil and full sun.

One of the easiest and one of the most beautiful lilies is *L. speciosum* which flowers from August through October. The white variety is especially beautiful and the pinks vary from clear pink to carmine. They will grow in the border, but they are especially fine for pots.

List of Plant Names

(Continued from Spring, 1958)

Ulex	ancient Latin name
ulicinus	like ulex
uliginosus	of wet, marshy places
ulmifolius	elm-leaved
ulmoides	elm-like
Ulmus	ancient Latin name for elm
Umbellularia	from Lat. umbella, a sunshade
umbellulatus	with smaller umbels
umbonatus	having an umbo or boss
umbraculifera	umbrella-bearing
umbrosus	shade-loving
uncinatus	hooked
undatus	waved
undulatifolius	undulate-leaved
undulatus	undulated, wavy
Ungernii	for Baron Ungern Sternberg, German, 19th Cent.
Ungnadia	for Baron von Ungnad, Austrian ambassador, 16th Cent.
unguicularis	clawed
unguipetalus	with petals clawed
unicolor	of one color
unicornis	one-horned
unidentatus	one-toothed
uniflorus	one-flowered
unifolius	one-leaved
unilateralis	one-sided
Uniola	ancient Latin name
univittatus	one-striped
urbanus	city-loving
Urbinia	for Dr. Manuel Urbina
Urceocharis	from the parent genera Urceolina and Eucharis
urceolatus	urn-shaped
urens	burning, stinging
Urera	from Lat. uro, to burn or sting
Urginea	for an Arabian tribe, Beni Urgin
urnigera	pitcher-bearing
urophyllus	tail-leaved
urostachyus	tail-spiked
Ursinia	for John Ursinus, 16th Cent. German writer
ursinus	pertaining to bears
Urtica	classical Latin name, from uro, to burn
urticaefolius	nettle-leaved
urticoides	nettle-like
usitatissimus	very commonly used
usneoides	resembling the lichen Usnea
ustulatus	burnt, scorched
utilis	useful
utilissimus	most useful
Utricularia	Latin, a little bag
utriculosus	bladder-like
uvarifolium	Uvaria-like leaves
uvifera	grape-bearing
Uvularia	Latin, palate
vacciniifolius	Vaccinium leaved
Vaccinium	ancient Lat. name of blueberry
vaccinioides	vaccinium-like
vacillans	swaying
vagans	wandering
vaginalis	sheathed
valdiviensis	of Valdivia, Chili
valentinianum	for Pere S. P. Valentine, missionary in W. China
valentinus	from Valencia, Spain
Valeriana	Lat. valeo, to be strong
Valerianaella	diminutive of Valeriana
validus	strong

Traffic Analysis for 1958

WE are continuing the count of traffic along Arboretum Drive North, first reported in the Arboretum Bulletin, Winter 1957. For the first third of 1958 we have had an estimated 52,450 vehicles using the upper road. We have no comparable figures for 1957 since we were unable to count in January and February of that year. However, we estimate that those two months had a total of some 6,000 cars passing the counting station, as opposed to 12,150 cars for this year. The figures for the months of March and April do not show a gain for 1958, when we counted 40,300 cars for the two months, whereas in 1957 we counted 44,390. In all, however, we estimate that the 1958 total will run somewhat above 1957.

Some interesting preliminary figures have been obtained from an hourly count of Sunday traffic. It appears that the peak hours for Arboretum visitors are between 2 and 5 p.m. when 50 per cent of the day's total was counted.

The monthly totals for the first four months of 1958 and 1957 are compared below:

	1958	*1957*
January	2,970	no count
February	9,180	no count
March	20,810	20,440
April	19,490	23,950

J.A.W.

Endre Ostbo

The University of Washington lost a good friend and benefactor by the death of Endre Ostbo, May 16, 1958. He had just finished completing his exhibit at the Bellevue Shopping Center Pavilion for the Rhododendron Show held under the auspices of the Seattle Rhododendron Society when he suffered a heart attack.

Mr. Ostbo had conducted his own nursery business near Bellevue for over twenty years. His knowledge of horticulture was extensive, his propagating methods unique, and the results of his rhododendron hybridizing gained for him the plaudits and acclaim of rhododendron enthusiasts throughout the Pacific Northwest.

Mr. Ostbo's purpose in developing new rhododendron crosses was to improve upon already existing varieties. If the cross did not meet this exacting test, it was ruthlessly discarded. As a result, Mr. Ostbo's named crosses have achieved for themselves a very definite and choice place in rhododendron plantings throughout this area. They include King of Shrubs, Mrs. Donald Graham, White Lily, Phyllis Ballard, Edward Dunn, Jean Rogers and others yet to be published, as well as several Azaleodendrons using *Azalea occidentalis* as one of the parents.

Mr. Ostbo was one of the charter members of the Seattle Rhododendron Society and invariably brought to the Society meetings flower or plant specimens of outstanding contemporary interest. In addition Mr. Ostbo presented as gifts to the Arboretum specimen plants of all of his worthwhile crosses.

Perhaps the most outstanding personal quality which endeared Mr. Ostbo to those who knew him well was his infinite patience in discussing problems in connection with the raising and placement of rhododendrons. If he was convinced of the sincerity of a garden owner in learning about and improving his rhododendron planting, he would always take time out to help and advise. On the other hand, he did not waste time on those who had no genuine interest in rhododendrons.

Mr. Ostbo's contribution to the improvement in rhododendron varieties in recent years was considerable. His influence and achievements will be sorely missed.

DONALD G. GRAHAM

The Seattle Chapter of the American Rhododendron Society has set up a fund to provide an appropriate memorial planting in the Arboretum to Mr. Ostbo. Contributions for this purpose may be sent to Mr. Albert F. Hull, 525 Kinnear Place, Seattle 99. Checks should be made payable to the Seattle Rhododendron Society.

Woody Plants That Are Dioecious

(Continued from Page 43)

dioecious plants, make certain to have a majority of the true pistillate plants with the certainty that some pollen-bearing plants are on the same property or else close by. It is only by doing this that colorful fruit can be assured.

New or Unusual Plants in the Arboretum

(Continued from Page 50)

firmed the species' identity, since it is unlike any other in the genus.

Aside from seedlings we have found the plant a little difficult to propagate. Cuttings taken in early summer will strike root but are difficult to over-winter. Until this problem is solved *Rehderodendron* will certainly be rare in the commercial trade.

Probably it will never replace *Styrax* or *Halesia* as an ornamental tree, but with its charming flowers and delicious fragrance it should win its way into the gardens of many when it becomes more generally available.

BOOK REVIEWS

The Azalea Book, by Frederic P. Lee. 324 pp. Illus. (D. Van Nostrand Co., Princeton, N. J.) Price $8.95.

AZALEAS make up a very large and complex group of plants including some 70 species. Practically all of these have some garden value and many have been used by the breeders who, in the last century, have given us several thousand named horticultural varieties. In order to facilitate a better understanding of this tremendous number of botanical and horticultural entities some classification is essential, but obviously not easy. All Azaleas are Rhododendrons, comprising a subgenus of that larger group, or horticulturally speaking, one series of the genus *Rhododendron*. The species in the *Azalea* series are further broken down into six subseries. The named varieties, mostly of hybrid origin, have, over the years, been classified in various ways, mostly by known or speculative botanical relationship, by place of origin, or by name of originator.

Mr. Lee, in *The Azalea Book*, has given us the most complete and up-to-date classification now available, together with descriptions of more than 2,000 varieties. A great many of these he has grown in his own garden. This has obviously been a tremendous task and one which will not soon be improved upon; hence this should be a standard reference book on Azaleas for many years to come.

The Azalea Book is a sequel to *The Azalea Handbook*, printed in 1952 by the American Horticultural Society as a special number of its journal, *The National Horticultural Magazine*. The Handbook was the work of a committee chairmaned by Mr. Lee. *The Azalea Book* is also described as an A. H. S. book, but credit for this outstanding contribution to Azalea literature must go primarily to Fred Lee.

While there are many points of resemblance between the Handbook and the new volume, the latter has twice as many pages, is well indexed, and is much more complete and up-to-date in every way.

Among items which will appeal to special groups is a list of contemporary Azalea breeders, a list of Azalea nurserymen, a list of Azalea types imported from other countries by the U. S. D. A., and a list of important towns in each state with the hardiness zone of each. The species and a number of hybrid groups are then given hardiness zone ratings. This is an approximation, of course, as there is naturally considerable variation within the groups, some of which are considered together only because they were introduced by one man (e.g. the Gable group) and not because of any special uniformity as to type or hardiness.

Although the variety classification and descriptions will probably be of most value to the Azalea fan, there is ample information for the beginner, with thorough discussion of climate, soils, fertilizers, and pest control. The author is a lawyer, but the breadth of his horticultural knowledge is obvious. About one third of the book is devoted to matters pertaining to culture, and the remainder to a discussion of classification, groups, and horticultural varieties. That seems just about right, as one begins to use the book as a reference whenever an Azalea question needs to be settled.

J. HAROLD CLARKE

Tree Injuries, Their Causes and Prevention, by H. L. Edlin and M. Nimmo; Thames & Hudson; London-New York. (1956) Price 21 shillings.

ON first paging through this book I was struck by the similarity between it and a textbook of human pathology. After reading it, the similarity became even more striking. The authors have attempted to classify all the injuries that might occur to trees and in most cases have well documented photographs which illustrate those injuries in some detail. The types of damage to trees that are covered include wind, drought, freezing, lightning, erosion, vandalism, faulty pruning, fire, browsing by livestock, insect and infestation of parasitic plants. Each of these categories is dealt with in some detail and, where possible, remedies for prevention or cure are suggested.

Although written for English forests, most of the material is applicable to our trees and woodlands; even the insect and fungi described are often the same, or at least very similar to what we find here. This is a valuable little book for the forester and for anyone who grows and cares for trees.

J. A. WITT

Gardening, a New World for Children, by Sally Wright, illustrated by Ruth Sheetz. The Macmillan Co.; New York, 1957. Price $2.75.

MAKING the adventure of "gardening" an enticing one for your child is the aim of the writer in this imaginative little book. "Not a-garden-for-every-child;" rather, it is "not the same garden for all children," states the author.

In the many easy-to-read delightful chapters, one becomes increasingly aware of the variety of creative projects described through the basic fundamentals of year-round gardening. There are ideas here for the youngest beginner as well as the older boy or girl.

Parents guiding their youngsters in gardening will perhaps be surprised at the number of challenging and unique activities in which the author has channeled her subject, whether it be creating miniature gardens, working with dried flowers, leaves, seeds, etc., or just planting and maintaining the pot garden or the larger flower garden. It is always apparent that the emphasis is on ideas personally appealing to children, rather than conventional easy ones.

Valuable to the 183-page book is the varied list of suggested reading, mostly for adults working with children on the subject, and the four pages dealing with sources and addresses of suppliers.

BITA DU FLON

Junction
FEED & SEED STORE
4747 California Avenue
Seattle 16, Washington
WEst 2-6822

Colour Magic in the Mexican Wildflowers

(Continued from Page 55)

coast, with inland bays and tiny islands lining the shoreline, the wild woods and jungle lands, and the great handsome trees, hundreds of years old, standing guard everywhere. But not the least of these are the beautiful hillsides clothed with colorful and fantastic wildflowers.

As stated above, I went down primarily to get pictures of this richness and vivid coloring, so I centered my interest in sections where there were drifts of lavish scenic effects and picturesque vistas.

For the serious minded botanist, however, who is bent on finding the rare and unusual, I know of no location more productive and rewarding than the territory around Mazatlan, in the State of Sinaloa, and thence eastward sixty miles to the lowlands and mountain areas of the Sierra Madre Range. Many are the interesting specimens to be found.

I would like to take this opportunity of expressing my grateful thanks to the Travel Department of "Sunset Magazine" for their generous contacts.

Also to the United States Consul at Guadalajara, who was most helpful in guiding me to sections where the wildflowers were at their best, and again, to an unusually patient and cordial friend who allowed me access to his *Trees and Shrubs of Mexico,* by Paul C. Standley (1920-26), and *Rio Mayo Plants,* by H. S. Gentry (1942).

And so, as they say in Mexico to all visitors who are departing from their midst, I say to you, Adios, ta ta, and Hasta la Vista.

PLEASE MENTION THE ARBORETUM BULLETIN WHEN BUYING FROM OUR ADVERTISERS

HYBRID RHODODENDRONS
ROCK & WATER PLANTS
GROUND COVERS
CRESTED FERNS

L. N. ROBERSON NURSERY
1540 East 102nd Street
Seattle 55, Washington

Now is the time of year to mulch your plants and shrubs with

ROTTED COW MANURE and COMPOSTED STEER MANURE

SACK YARD LOAD

Viewlands Fuel Garden Center

10535 Greenwood Phone EM 4-3900
Established 1931
Serving Seattle and Suburban Areas

Bunge Lumber & Hardware Co.
High Grade Peat Moss and All Types of Fertilizer
Including
Acid Fertilizer for Rhododendrons, Azaleas, Camellias, etc.

WEst 2-0022 9616 16th Avenue S.W., Seattle 6

What the Landscape Architect Can Do for You

(Continued from Page 49)

Conclusions

The landscape architect can help the newlyweds fulfill their dream of their new home or can assist the older owner adapt his property to up to date living and modern economical maintenance; he can design the new place as well as renovate the old. One does not have to be wealthy to afford his training, nor does one even have to own a home, for building and factory owners, towns and cities and even national parks have found that the employment of professional landscape architects has proved not only an economy but also a great step forward in good public relations.

HYPONeX®
SOLUBLE PLANT FOOD COMPLETE
Grows Better Plants in Soil, Sand or Water
Simply dissolve and water all your house plants, garden flowers, vegetables, shrubs and lawn. Feeds instantly. If dealer can't supply send $1 for 1 lb. Makes 100 Gals.
Guaranteed by Good Housekeeping
HYDROPONIC CHEM. CO., Copley, Ohio, U.S.A.

PRENTICE

Nursery and Decorating Co.

Thousands of Evergreen Ground Covers

These plants are fine, selected specimens, the same varieties used in distinctive Prentice landscaping projects.

MAPLES
AND DWARF PINES
FOR BONSAI USE

YOU FIND CONSISTENT QUALITY AT PRENTICE NURSERY

½ mile south of Boeing's

9252 E. Marginal Way PArkway 2-0842

Graduate
Landscape Architect

Services Available
on a Modest Fee Basis

•

One of the Largest Selections
of
Hardy . . . Woody
Plant Items in This Area

•

Strander Nurseries
13310 Interurban Avenue South
Seattle 88

Thirty acres on the Valley Highway at Foster

Phone CHerry 2-1253

CLEMATIS VINES

A WIDE SELECTION OF FINE VARIETIES TO CHOOSE FROM

MANY BLOOMING DURING THE SUMMER MONTHS

"Visitors Welcome"

HOPKINS NURSERY

On Bothell-Kirkland Highway

15028 100th Ave. N. E. **Bothell**

HUnter 6-2061

BEAUTIFUL FLOWERING SHRUBS AND TREES

Visit us for all your BROAD-LEAVED EVERGREENS and also for UNUSUAL SHRUBS, PLANTS and TREES

BONNYBROOK NURSERY

KIRKLAND-BOTHELL HIGHWAY

VAndyke 2-5917

COURTESY OF

Mt. Rainier Bulb Co.

1115 POST STREET

The Finnerud Forest

(Continued from Page 45)

from those prevailing in the Arboretum at Madison.

The University of Wisconsin
Arboretum News, Vol. 7, No. 1,
Madison, Wis., January, 1958.

DEODORIZED!

ALASKA FISH FERTILIZER

100% ORGANIC ALL FISH

NOW HAS **T. C. B.**

HELPS PREVENT *Mildew*

WHEN APPLIED TO FOLIAGE

DOG AND CAT REPELLANT ADDED

For All Your Garden Needs PAINTS • GARDEN SUPPLIES • TOYS • GIFTS

Why Go Downtown?

SHOP AT **MADISON PARK HARDWARE**

1837 42nd Ave. No. **Seattle 2, Washington** WE DELIVER **EA 2-5331**

A Welcome to Browse at the

PACIFIC NORTHWEST NURSERIES GARDEN STORE

JUST ACROSS THE STREET FROM THE
SHOPPING SQUARE AT BELLEVUE, WASH.

Extensive Variety of Flowering and Shade Trees
A Fine Selection of Rhododendron and Companion Plantings

COMPLETE GARDEN STORE

For GIFTS and FLOWERS

of Unmistakable Distinction

Crissey
FLOWERS • GIFTS

1329 Fifth Avenue **MAin 2-1100**

WIGHT'S NURSERY

Rhododendrons

Azaleas

Flowering and Fruit Trees

Annuals and Perennials

BAMBOO

Address

6110 N.E. Bothell Way

Phone HUnter 6-3258

Located at Kenmore

Golden Chinkapin

(Continued from Page 46)

laborious search to find it in fruit, which I did on the very highest peak and only one tree; fruit little more than half ripe, husk thickly beset with sharp prickles; found one small lateral shoot with male flowers."

From David Douglas' Journal, Oct., 1826, in Western Oregon. Published by William Wesley and Son, London, 1914.

New Members

(Continued from Page 61)

land, Ore.), Mrs. M. P. Patterson, Mrs. James C. Perry, Mrs. John E. Putman, Mrs. Edw. Rauscher, Mrs. Dan Reaugh, Mrs. Kenneth Rodal, L. J. Rogers, Mrs. Theodore A. Rogers, Mrs. Ralph C. Saxton, Mrs. Frank L. Saum, Mrs. Isabelle Shepherd, Mrs. Alvin Svarz, Jr., Miss Ethel Telban, Mrs. W. Paul Uhlmann, Mrs. H. L. Van Ness, Corydon Wagner, Mrs. H. E. Weeks, Mrs. Arthur Weis, Mrs. O. Fred Wille, Mrs. Helen L. Williams, Mrs. John Worthington, Terrace Garden Club.

PREVENT ROT
WITH
CUPROLIGNUM

Rot is expensive and inconvenient when it rots your

COLD FRAMES GARDEN STAKES
SEED FLATS TRELLISES
WINDOW HOTHOUSE
BOXES BENCHES
ETC.

Where there is CUPROLIGNUM
there is NO ROT

Sold by Most Lumber Yards and Hardware Dealers

Manufacturers

Rudd Paint & Varnish Co.

SEATTLE

Sole Distributors RUDD & CUMMINGS

1608 15th Ave. W. SEATTLE, WASH.

LIQUINOX

The All-Purpose
Blue Ribbon Fertilizer

Contains Yucca Extract

10-10-5 for plant growth and lawns.

0-10-10 for better blooms and hardier plants.

Ask your Dealer for Liquinox

TOP SOILS • MANURES

SOIL MIXTURES

ROCKERY ROCK

FAST DELIVERY SERVICE

Phones
PLANT—HUnter 6-3930
HOME—EMerson 2-5693

Bassett's Gro-Earth

Mail Address
17050 Brookside Blvd.
Seattle 55, Wash.

Plant at Alaska Road
2 miles north of Kenmore

REARDON WHOLESALE NURSERY

Rhododendrons

Azaleas

Heather

14244 First Avenue South

Phone CHerry 3-4134

USE a MODERN Plant Food!

MORE BEAUTIFUL — HEALTHY PLANTS
NO SEPARATION — EACH PELLET
A COMPLETE PLANT FOOD

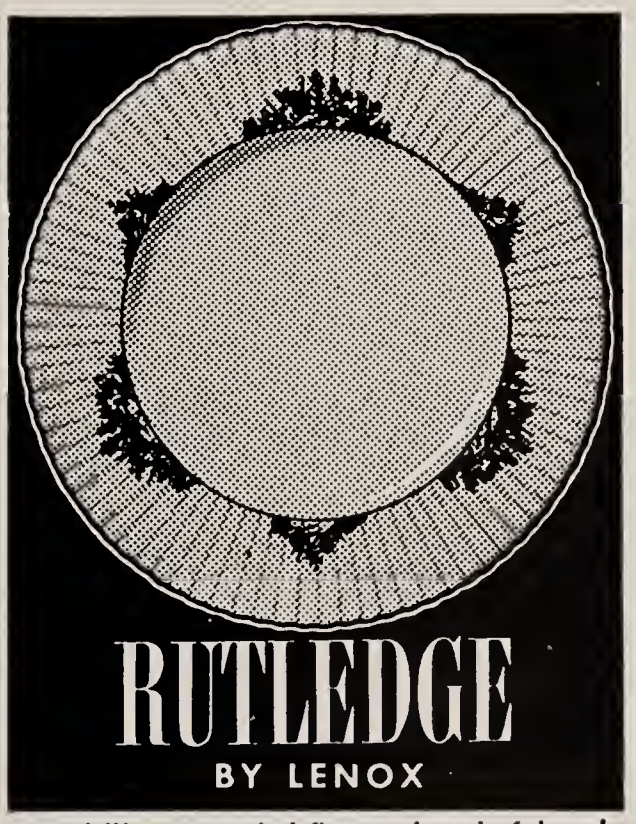
- **PELLETED**
- **ODORLESS**
- **DUST-FREE**
- **FREE-FLOWING**
- **EFFECTIVE**

6-10-4 ANALYSIS
MINOR ELEMENTS

50 Lb. Economy Bag
2.75

GARDEN CLUB
***GRANULATED* PLANT FOOD**

FRIEDLANDER AND SONS



Jewel-like, enameled flowers in colorful rock gardens. 5-piece plate setting.....$23.95

no money down—24 months to pay

FRIEDLANDER AND SONS

FIFTH AT PIKE
Open Monday night until 9

MA 2-7670

NORTHGATE
Open Wed. & Fri. nights until 9:30

Washington Association of GROUND SPRAYERS

Chemical applicators and plant experts . . . State tested and licensed. For professional insect, slug and weed control, soil sterilization, liquid fertilizing or pruning, call one of the following:

SPRAGUE SPRAY SERVICE — **EMerson 2-2542**
GEORGE MOCK, JR., *Owner*
Money-Back Guarantee on Peach Leaf Curl
14756 27th Avenue N.E.

ROBERT M. DYE — **EMerson 2-4944**
20063 19th Avenue N.E.

EASTSIDE SPRAYING & FOGGING SERVICE — **VAndyke 2-2112**
10021 126th N.E., Kirkland

GREENUP SPRAY SERVICE — **WEst 5-2095**
10217 2nd Avenue S.W.

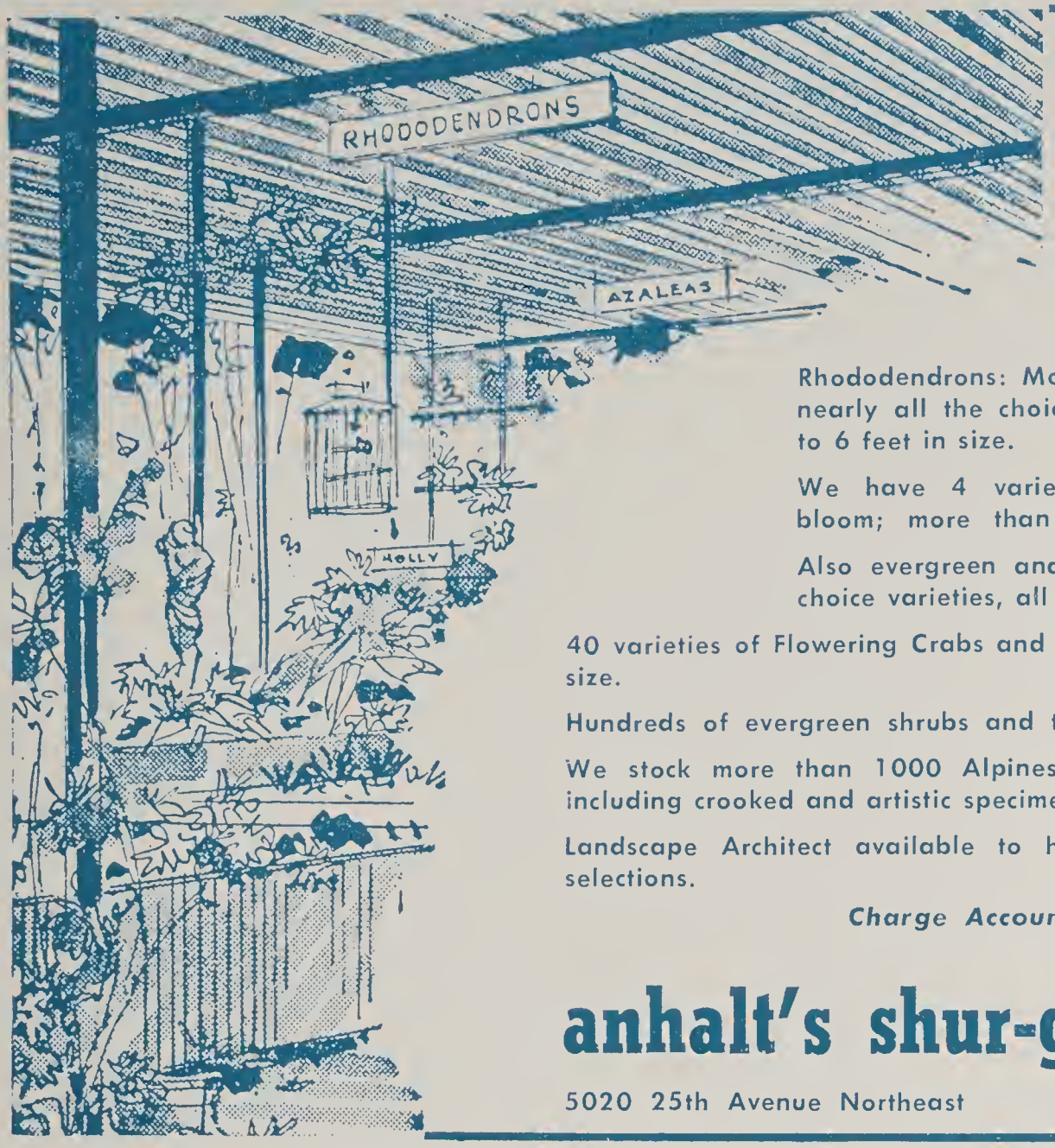
WASHINGTON TREE SERVICE — **EMerson 2-9620**
17868 28th Avenue N.E.

SEATTLE SPRAYING & TREE SERVICE — **SUnset 3-2633**
FLOYD MCKEEVER, *Owner*
8511 Linden Avenue

SCARBERY SPRAY SERVICE — **CHerry 2-1191**
13804 24th Avenue South

ARTHUR E. FAIRBANKS — **EMerson 3-7333**
10730 24th Avenue N.E.

REGIONAL CHEMICALS — **EMerson 2-2542**
Originators of Slug-fest, Liquid Slug Killer
14756 27th Ave. N.E.



BRIGHTEN YOUR GARDEN

Visit our Nursery and Select Plants and Trees for Fall Planting

Rhododendrons: More than 5000 plants in stock in nearly all the choice varieties, from 1½ years old to 6 feet in size.

We have 4 varieties of Andromedas, many in bloom; more than 1000 plants to choose from.

Also evergreen and deciduous Magnolias in many choice varieties, all sizes.

40 varieties of Flowering Crabs and Cherries, most of them blooming size.

Hundreds of evergreen shrubs and trees in the finest of specimens.

We stock more than 1000 Alpines and Bonsai plants and trees, including crooked and artistic specimens.

Landscape Architect available to help you with your plans and selections.

Charge Accounts Invited

anhalt's shur-gro nurseries

5020 25th Avenue Northeast LA 3-5000

Easy does it! *with*

SUNSHINE

HI-PRESS

SPHAGNUM

PEAT MOSS

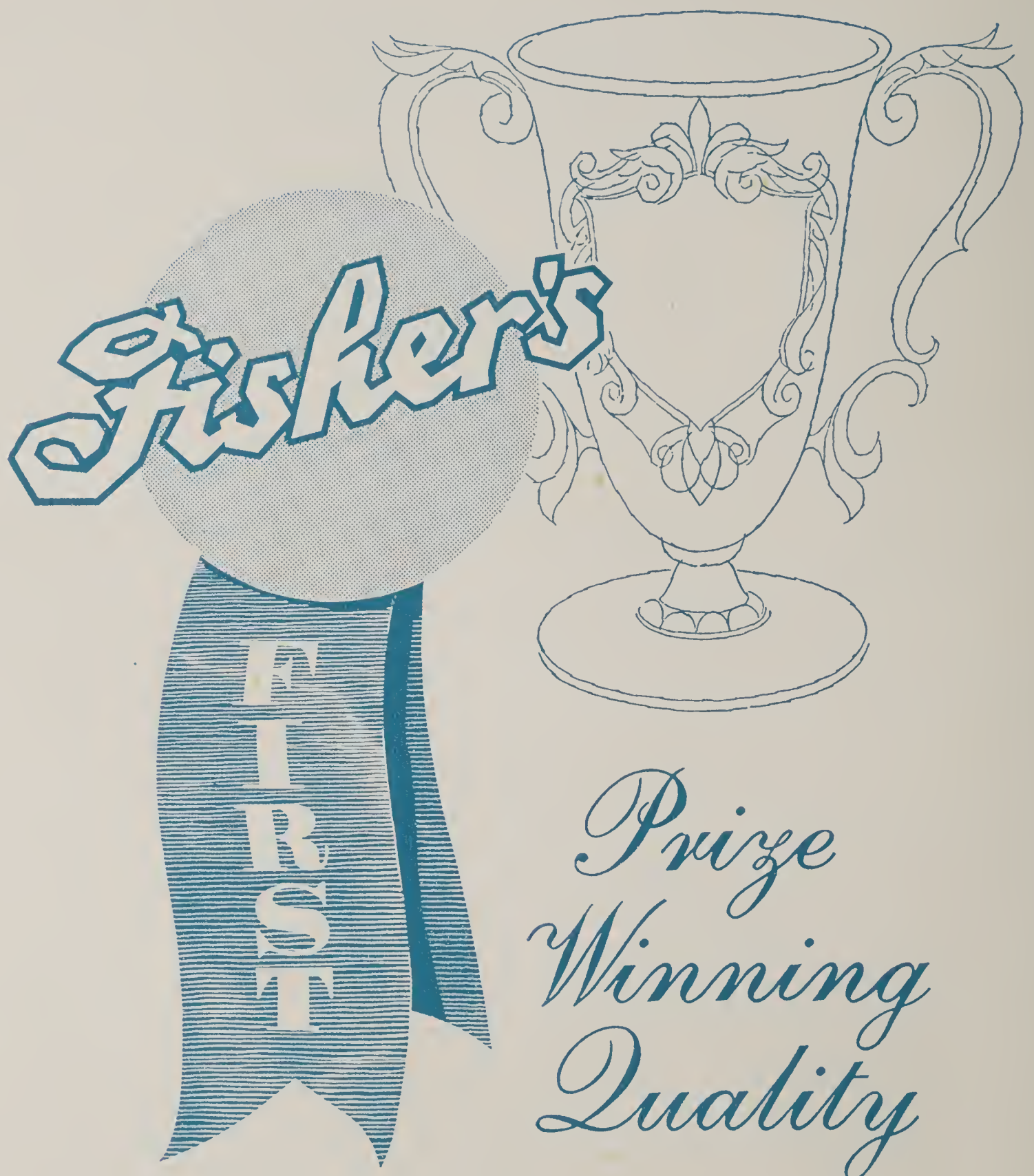
AVAILABLE AT **MALMO'S** AND OTHER GARDEN SUPPLY HEADQUARTERS

THE ARBORETUM BULLETIN

Published by the
Arboretum Foundation
University of Washington Arboretum
Seattle 5, Washington

BULK RATE
U. S. POSTAGE PAID
SEATTLE, WASHINGTON
Permit No. 413

POSTMASTER: If addressee has removed, please notify us of new address on Form 3547, postage for which is guaranteed.



FISHER'S—a great brand name
of the West—is your guide to the
finest in flours, cereals and mixes...
a sure symbol of quality
wherever it appears.

Fisher Flouring Mills Company, Seattle, Wash., U.S.A.